

**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Deborah Landolt Examiner #: 7130 Date: 6/2/03  
 Art Unit: 1626 Phone Number 30 8-4522 Serial Number: 09/838,66  
 Mail Box and Bldg/Room Location: CM13ED3 Results Format Preferred (circle) PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*  
 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

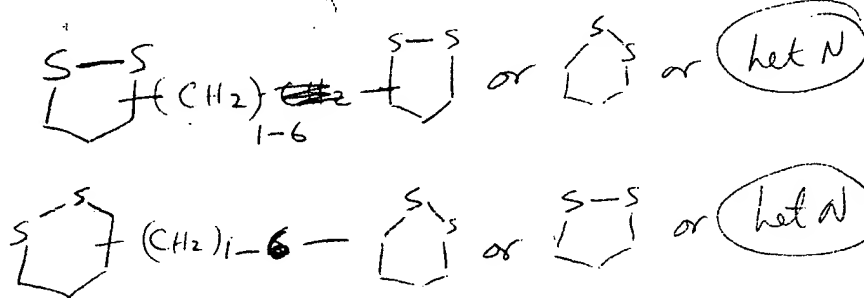
Title of Invention: Scavenger Composites  
 Inventors (please provide full names): Abdullah Hay-Yehia

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Paulo, can you search these composites.

6,549,039  
 6,472,432  
 6,251,935  
 5,650,429  
 5,334,612



CH<sub>2</sub> can be substituted or unsubstituted w/

- C=O-OH
- OH
- CH<sub>2</sub>NH<sub>2</sub>
- CH<sub>2</sub>-OH etc.

Thanks, *Paulo*

**STAFF USE ONLY**

Searcher: Sheppard  
 Searcher Phone #: 308-4499  
 Searcher Location: \_\_\_\_\_  
 Date Searcher Picked Up: \_\_\_\_\_  
 Date Completed: 6/5/03  
 Searcher Prep & Review Time: \_\_\_\_\_  
 Clerical Prep Time: \_\_\_\_\_  
 Online Time: \_\_\_\_\_

**Type of Search**

NA Sequence (#) \_\_\_\_\_  
 AA Sequence (#) \_\_\_\_\_  
 Structure (#) \_\_\_\_\_  
 Bibliographic \_\_\_\_\_  
 Litigation \_\_\_\_\_  
 Fulltext \_\_\_\_\_  
 Patent Family \_\_\_\_\_  
 Other \_\_\_\_\_

**Vendors and cost where applicable**

STN \_\_\_\_\_  
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 Dr. Link \_\_\_\_\_  
 Lexis/Nexis \_\_\_\_\_  
 Sequence Systems \_\_\_\_\_  
 WWW/Internet \_\_\_\_\_  
 Other (specify) \_\_\_\_\_



# ***STIC Search Report***

## ***Biotech-Chem Library***

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**TO: Deborah Lambkin**

**Location:**

**Art Unit: 1626**

**June 5, 2003**

**Case Serial Number: 856610**

**From: P. Sheppard**

**Location: CM1-1E03**

**Phone: (703) 308-4499**

**sheppard@uspto.gov**

### **Search Notes**

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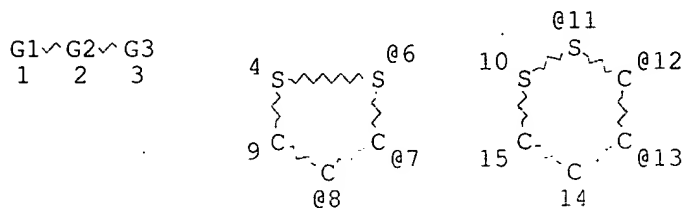
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FILE COVERS 1907 - 5 Jun 2003 VOL 138 ISS 23  
 FILE LAST UPDATED: 4 Jun 2003 (20030604/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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 L1 STR



VAR G1=6/7/8/11/12/13  
 REP G2=(1-6) C  
 VAR G3=6/7/8/11/12/13  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RSPEC I  
 NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE  
 L3 62 SEA FILE=REGISTRY SSS FUL L1  
 L4 16 SEA FILE=HCAPLUS ABB=ON PLU=ON L3

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=> d ibib abs hitrn 14 1-16

L4 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 2002:835614 HCAPLUS  
 TITLE: Product class 7: 1,2-dithiolium salts and related compounds

AUTHOR(S): Pedersen, C. Th.  
 CORPORATE SOURCE: Dep. Chem., Odense Universitet, Odense, Den.  
 SOURCE: Science of Synthesis (2002), 11, 107-189  
 CODEN: SSCYJ9  
 PUBLISHER: Georg Thieme Verlag  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English  
 AB A review. Synthesis and reactions of simple and condensed 1,2-dithiolium compds. are reviewed. Reactions covered include condensations, heterocyclizations, oxidns., cyclizations, and substitution reactions.  
 IT INDEXING IN PROGRESS  
 IT 66315-05-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of [(dithiolylydene)methyl]oxadithiapentalenes from pyrantrione and 3-methylsulfanyl-1,2-dithiolium salts)  
 IT 66315-06-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (sulfuration of [(dithiolylydene)methyl]oxadithiapentalene by P2S5)  
 REFERENCE COUNT: 333 THERE ARE 333 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 2 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1990:414570 HCAPLUS  
 DOCUMENT NUMBER: 113:14570  
 TITLE: Photoextrusion of ethylene from 1,2,6,9-tetrathiacyclododecane via a bis-sulfuranyl 1,4-biradical  
 AUTHOR(S): Anklaam, Elke; Margaretha, Paul  
 CORPORATE SOURCE: Bereich Strahlenchem., Hahn Meitner Inst. Berlin G.m.b.H., Berlin, D-1000/39, Germany  
 SOURCE: Journal of Chemical Research, Synopses (1990), (5), 168  
 CODEN: JRPSDC; ISSN: 0308-2342  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Irradn. of 1,2,6,9-tetrathiacyclododecane gives ethylene and 1,2-dithiolane in quant. yields via a bis-sulfuranyl 1,4-diradical.  
 IT 127559-92-6P  
 RL: PRP (Properties); PREP (Preparation)  
 (formation and cleavage of exocyclic sulfur-carbon bond of, in photodissocn. of tetrathiacyclododecane with formation of ethylene and dithiolane)

L4 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1988:177660 HCAPLUS  
 DOCUMENT NUMBER: 108:177660  
 TITLE: The crystal structures of C33H23S4I3 and C9H7S2I3: triiodide salts of positively charged unsaturated cyclic disulfides  
 AUTHOR(S): Hordvik, Asbjorn; Jynge, Knut; Hansen, Lars K.  
 CORPORATE SOURCE: Inst. Math. Phys. Sci., Univ. Tromsoe, Tromso, N-9001, Norway  
 SOURCE: Acta Chemica Scandinavica, Series A: Physical and Inorganic Chemistry (1988), A42(1), 79-86  
 CODEN: ACAPCT; ISSN: 0302-4377  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The crystal structures of C33H23S4I3, 5-phenyl-3-[1,3-diphenyl-3-(5-phenyl-1,2-dithiol-3-ylidene)prop-2-enyl]-1,2-dithiol-1-ium triiodide, (I) and C9H7S2I3, 4-phenyl-1,2-dithiol-1-ium triiodide, (II) were detd. by x-ray anal. I is monoclinic, space group I2/c, with a 28.254(5), b 9.627(2), c 25.283(6) .ANG., and .beta. 105.50(2).degree.; Z = 8; final R = 0.05. II

is monoclinic, space group Ia, with a 8.882(1), b 24.565(3), c 6.387(1) .ANG., and .beta. 90.02(2).degree.; Z = 4; final R = 0.05. At. coordinates are given. There are 2 different I3- ions in I, both in 2-fold positions. The I-I distances are 2.920(1) .ANG. in one and 2.935(1) .ANG. in the other. The corresponding I-I-I angles are 180.0 and 175.0(2).degree.. There are 2 unsatd. 5-membered disulfide rings in the cation of I, each carrying 1/2 pos. charge. The av. S-S and C-S bond lengths in the rings are 2.048(5) and 1.726(12) .ANG.. There are 3 S...I close contacts. The I-I bond lengths in II are 2.876(6) and 2.973(5) .ANG., with I-I-I angle 178.3(2).degree.. There are I...S close contacts in linear and triangular arrangements.

IT 113944-86-8

RL: PRP (Properties)  
(crystal structure of)

L4 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1982:471636 HCAPLUS

DOCUMENT NUMBER: 97:71636

TITLE: Studies of the electronic structure of conductive organic crystals and its relationship to electrical conductivity

AUTHOR(S): Zhang, Qiyuan; Yan, Jimin; Wang, Zuoxin; Wu, Gaozhen; Pan, Qiangyu; Gao, Zhidi

CORPORATE SOURCE: Inst. Chem., Acad. Sinica, Beijing, Peop. Rep. China

SOURCE: Huaxue Xuebao (1982), 40(2), 111-23

CODEN: HHHPA4; ISSN: 0567-7351

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB The elec. cond. of 54 org. crystals was studied with respect to their electronic structure by correlation with energy, symmetry match, and max. overlap of the frontier orbitals. The energy spectra and the LCAO-MO coeffs. were also calcd.

IT 81731-56-8D, derivs.

RL: PRP (Properties)  
(elec. cond. of, electron structure in relation to)

L4 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1979:152080 HCAPLUS

DOCUMENT NUMBER: 90:152080

TITLE: 3-Methylthio-1,2-dithiolylium salts. II. Reaction with 4-hydroxy-3H-pyran-2,6-dione. 1,3-bis-(1,2-dithiol-3-ylidene)-2-propanones

AUTHOR(S): Frandsen, Erik G.

CORPORATE SOURCE: Dep. Chem., Odense Univ., Odense, Den.

SOURCE: Tetrahedron (1978), 34(14), 2175-8

CODEN: TETRAB; ISSN: 0040-4020

DOCUMENT TYPE: Journal

LANGUAGE: English

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

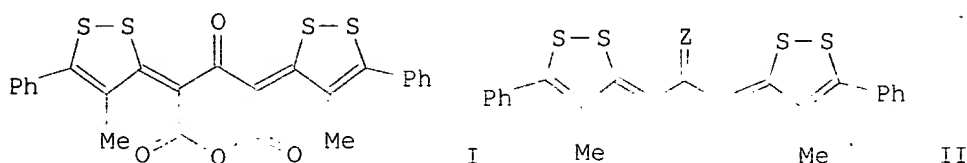
AB Condensation of dithiolylium salts I (R = H, R1 = Ph, C6H4Br-4, CMe3; R = Me, Ph, R1 = Ph) and II with acetonedicarboxylic acid anhydride gave 54-91% resp. bis condensation products, which on hydrolysis-decarboxylation (concd. H2SO4, 150.degree.) gave 1,3-bis(1,2-dithiol-3-ylidene)-2-propanones III and IV. The condensation product from I (R = R1 = Ph) gave, on decarboxylation-hydrolysis, 80% cyclized product V.

IT 69856-50-4P 69856-51-5P 69856-52-6P  
69856-53-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L4 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1978:170012 HCAPLUS  
DOCUMENT NUMBER: 88:170012  
TITLE: 1,3-Bis-(4-methyl-5-phenyl-1,2-dithiol-3-ylidene)propane-2-thione, a five-sulfur compound related to 1,6,6a.lambda.4-trithiapentalenes  
AUTHOR(S): Frandsen, Erik G.  
CORPORATE SOURCE: Dep. Chem., Odense Univ., Odense, Den.  
SOURCE: Journal of the Chemical Society, Chemical Communications (1977), (23), 851-2  
CODEN: JCCCAT; ISSN: 0022-4936  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



AB Condensation of 3-methylthio-4-methyl-5-phenyl-1,2-dithiolylium iodide with 4-hydroxy-3H-pyran-2,6-dione gave the trione I which on acidic hydrolysis gave the propanone II (Z = O). Reaction of II (Z = O) with P4S10 gave the title compd. (II; Z = S).

IT 66315-05-7P

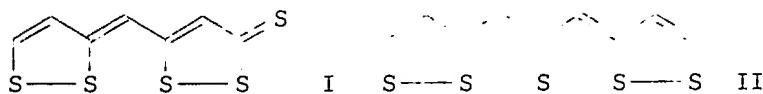
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and sulfuration of)

IT 66315-06-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L4 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1977:71497 HCAPLUS  
DOCUMENT NUMBER: 86:71497  
TITLE: Structures of linear multisulfur systems. X. Sulfur-sulfur bonding in compounds with four and five collinear sulfur atoms. A discussion based on MO-calculations  
AUTHOR(S): Sletten, Jorunn  
CORPORATE SOURCE: Dep. Chem., Univ. Bergen, Bergen, Norway  
SOURCE: Acta Chemica Scandinavica, Series A: Physical and Inorganic Chemistry (1976), A30(6), 397-404  
CODEN: ACAPCT; ISSN: 0302-4377  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



AB CNDO/2 calcns. were performed on a series of mols. contg. 4 and 5 colinear S atoms, e.g., I and II. The equil. geometries and charge distributions were calcd.; comparison of theor. results with exptl. data from x-ray crystallographic structure detns. showed that the CNDO/2 method is able to predict cases in which partial bonding between S atoms occurs. The geometrical arrangements predicted for the S sequences are closely related to those predicted for linear polyhalogen compds.

IT 61760-13-2 61760-14-3 61760-16-5

RL: PRP (Properties)

(electron configuration and bond lengths in)

L4 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1976:576574 HCAPLUS

DOCUMENT NUMBER: 85:176574

TITLE: The electrochemistry of organic sulfur compounds.

Part VI. The anodic dimerization of

.alpha.-(1',2'-dithiol-3'-ylidene)acetophenones

AUTHOR(S): Pedersen, Carl T.; Parker, Vernon D.; Hammerich, Ole

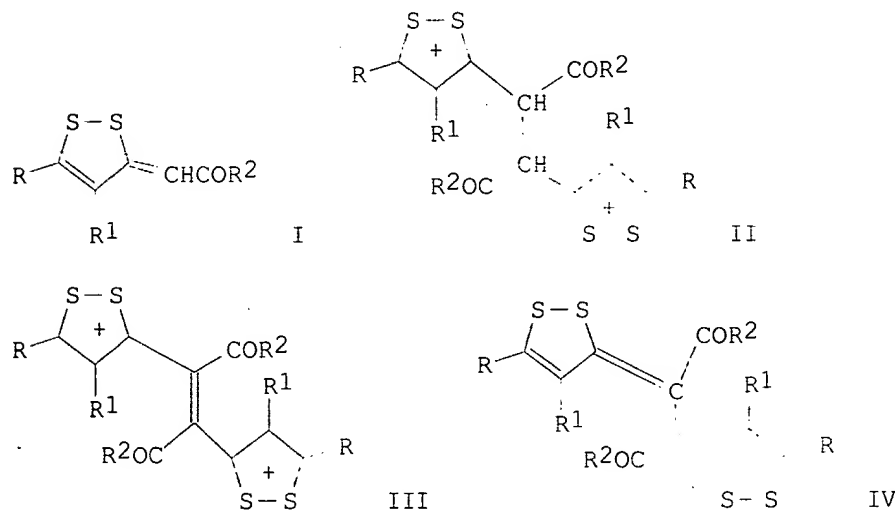
CORPORATE SOURCE: Dep. Chem., Odense Univ., Odense, Den.

SOURCE: Acta Chemica Scandinavica, Series B: Organic Chemistry and Biochemistry (1976), B30(6), 478-84  
CODEN: ACBOCV; ISSN: 0302-4369

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB One electron oxidn. of I (R = Ph, p-Me3CC6H4, p-MeOC6H4, H; R1 = H, Ph, p-MeC6H4; R2 = Ph, p-BrC6H4) was accompanied by the formation of the corresponding dimeric dications (II), which were not capable of undergoing further electrochem. oxidn. Reaction of II with 2,3-dichloro-5,6-dicyano-1,4-benzoquinone resulted in H abstraction and formation of a new dication (III), which upon electrochem. redn. gave the uncharged dimer of I, the bi[.alpha.-(1',2'-dithiol-3'-ylidene)phenacyl] (IV). The effect of substitution on the reaction is discussed.

IT 60822-89-1 60822-90-4 60822-91-5

60822-92-6 60822-93-7 60822-94-8

60855-13-2

RL: PROC (Process)

(reaction with dichlorodicyanobenzoquinone and voltammetry of)

IT 60822-95-9 60822-96-0 60822-97-1

60822-98-2 60822-99-3 60823-00-9

60855-12-1

RL: PROC (Process)  
(voltammetry of)

L4 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1974:16415 HCAPLUS  
DOCUMENT NUMBER: 80:16415  
TITLE: LCAO MO calculations of sulfur-containing  
.pi.-electron systems. XXXIII. Absorption behavior  
of sulfur-heterocyclic polymethine dyes  
AUTHOR(S): Fabian, J.; Hartmann, H.  
CORPORATE SOURCE: Sekt. Chem., Tech. Univ., Dresden, Ger. Dem. Rep.  
SOURCE: Tetrahedron (1973), 29(17), 2597-608  
CODEN: TETRAB; ISSN: 0040-4020  
DOCUMENT TYPE: Journal  
LANGUAGE: German

AB The long-wavelength absorptions of ionic S-contg. polymethine dyes were  
detd. and discussed using the concepts of iso-.pi.-electron count and  
color-detg. factors in polymethine chains. The limits of both concepts  
were indicated and the relations between color and constitution  
interpreted by quantum chem. .pi.-methods.

IT 46201-05-2 47304-31-4

RL: PRP (Properties)  
(electronic absorption spectra of)

IT 47304-31-4 50962-64-6 50962-67-9

RL: PRP (Properties)  
(electronic absorption spectra of, calcn. of)

L4 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1973:505115 HCAPLUS  
DOCUMENT NUMBER: 79:105115  
TITLE: Heterocyclic sulfur compounds. LXIV. Rearrangement  
of 5-[(1,2-dithiol-3-ylidene)methyl]-1,2-dithiolylum  
cations  
AUTHOR(S): Lemarié-Retour, Chantal; Stavaux, Madeleine; Lozac'h,  
Noel  
CORPORATE SOURCE: Dep. Chim., Univ. Caen, Caen, Fr.  
SOURCE: Bulletin de la Societe Chimique de France (1973), (5)  
(Pt. 2), 1659-65  
CODEN: BSCFAS; ISSN: 0037-8968  
DOCUMENT TYPE: Journal  
LANGUAGE: French

GI For diagram(s), see printed CA Issue.

AB The dithiolylidenemethyldithiolium salts I (R = CMe<sub>3</sub>, Ph, p-MeOC<sub>6</sub>H<sub>4</sub>,  
p-ClC<sub>6</sub>H<sub>4</sub>; R<sub>1</sub> = Me, CMe<sub>3</sub>, Ph, p-MeOC<sub>6</sub>H<sub>4</sub>; X = I, I<sub>3</sub>) were obtained by  
heating II with III. On heating in pyridine I rearranged to IV (X = S)  
which were oxidized to IV (X = O) with PhCNO. The rearrangement mechanism  
of I to IV is discussed.

IT 5676-45-9P 35093-36-8P 50412-87-8P

50412-88-9P 50412-89-0P 50558-13-9P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L4 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1973:57246 HCAPLUS  
DOCUMENT NUMBER: 78:57246  
TITLE: LCAO-MO calculations of sulfur-containing  
.pi.-systems. 29. Protonation of  
bisdithiolomonomethines  
AUTHOR(S): Fabian, Juergen; Hartmann, Horst  
CORPORATE SOURCE: Sekt. Chem., Tech. Univ. Dresden, Dresden, Ger. Dem.  
Rep.  
SOURCE: Zeitschrift fuer Chemie (1972), 12(9), 349-51

- CODEN: ZECEAL; ISSN: 0044-2402
- DOCUMENT TYPE: Journal  
LANGUAGE: German
- GI For diagram(s), see printed CA Issue.
- AB The intensively colored solns. of the methines I [R, R4 = H or Ph; R1 = H or Me; R2 = H, Ph, CPh, or CO2Et; R3 = H; RR1 = benzo; R2R3 = CH2CH2 or (CH2)3] and II (R, R3 = Ph; R1, R2 = H; or RR1 or R2R3 = 1-cyclohexen-1,2-ylene) in org. solvents absorbed light of 520-630 nm, while solns. of I and II in mineral acids remained colorless due to protonation. A comparison of the uv and visible spectra of I and II with those of III and IV indicated that the protonation of I and II proceeded in the meso-position to give the derivs. V and VI, resp. V and VI absorbed more intensely and at higher wavelengths than I and II owing to the interannular, nonbonding S-S interactions, as confirmed by .pi.-MO PPP calcs.
- IT 39858-92-9 39858-93-0 39858-94-1  
39859-00-2 39859-01-3 39945-12-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(protonation of, uv and visible spectra in relation to)
- IT 39859-06-8 39859-07-9 39859-08-0  
39921-41-0  
RL: PRP (Properties)  
(uv and visible spectra of)
- L4 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 1972:72440 HCAPLUS  
DOCUMENT NUMBER: 76:72440  
TITLE: Rearrangement of 3-aryl-5-[(5-aryl-1,2-dithiol-3-ylidene)methyl]-1,2-dithiolium cations  
AUTHOR(S): Retour, Chantal; Stavaux, Madeleine; Lozac'h, Noel  
CORPORATE SOURCE: Dep. Chim., Univ. Caen, Caen, Fr.  
SOURCE: Bulletin de la Societe Chimique de France (1971), (9), 3360-1  
CODEN: BSCFAS; ISSN: 0037-8968
- DOCUMENT TYPE: Journal  
LANGUAGE: French
- GI For diagram(s), see printed CA Issue.
- AB I rearrange to 5-aryl-2-(5-aryl-1,2-dithiol-3-ylidene)-2,3-dihydrothiophene-3-thiones (II). A mixt. of I (Ar = Ph, X = ClO4) and pyridine is refluxed to give II (Ar = Ph). II (Ar = Ph) and II (Ar = p-anisyl) are obtained from the corresponding I (X = iodine). Probably, 3-methylthio-1,2-dithioliums react with malonic acid to give II via I.
- IT 13402-74-9 35093-36-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(rearrangement of)
- L4 ANSWER 13 OF 16 HCAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 1968:115676 HCAPLUS  
DOCUMENT NUMBER: 68:115676  
TITLE: Dithiole series. III. Dithiolocyanines  
AUTHOR(S): Easton, D. B. J.; Leaver, Derek; McKinnon, David M.  
CORPORATE SOURCE: Univ. Edinburgh, Edinburgh, UK  
SOURCE: Journal of the Chemical Society [Section] C: Organic (1968), (6), 642-4  
CODEN: JSOOAX; ISSN: 0022-4952
- DOCUMENT TYPE: Journal  
LANGUAGE: English
- GI For diagram(s), see printed CA Issue.
- AB Methinecyanines were prepd. from 1,2- and 1,3-dithiolium salts. The violet compd., previously thought to be a C-betaine derived from bis[3-(benzo-1,2-dithiole)]methinecyanine, is shown to be 2-(benzo-1,2-dithiol-3-ylidene)-2,3-dihydrobenzo[b]thiophene-3-thione (I). Two by-products, obtained during an unambiguous synthesis of the latter

compd., are shown to be derivs. (II, X = S, O) of 6H-dibenzo[b,f]thieno[3,2-b]thiopyran.

IT 14969-68-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L4 ANSWER 14 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1967:105899 HCAPLUS

DOCUMENT NUMBER: 66:105899

TITLE: Dithiolium compounds

INVENTOR(S): Klingsberg, Erwin

PATENT ASSIGNEE(S): American Cyanamid Co.

SOURCE: U.S., 3 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3299055		19670117	US	19630802

GI For diagram(s), see printed CA Issue.

AB Compds. of the general formulas I and II are dyes for polyacrylonitriles. Thus, a mixt. of 1.9 g. 3-methylthio-5-phenyl-1,2-dithiolium methosulfate and 1.1 g. 3-methyl-5-phenyl-1,2-dithiolium chloride in 60 ml. alc. was warmed on a steam bath for 0.5 hr., chilled, and filtered to give violet I (X = Z = Ph, Y = H, Q = mixt. of Cl and MeSO<sub>4</sub>), m. 230.degree., violet on polyacrylonitrile; Q = ClO<sub>4</sub> and Q = Br analogs, m. 232.degree. (decomp.) and 212.degree. (decomp.), resp. Similarly, other I were prepd. (X, Y, Z, Q, and shade given): H, Ph, Ph, Cl + iodide, violet [m. 150.degree. (decomp.) (AcOH)]; X + Y = benzo, Ph, Cl + iodide, purple; H, H, H, iodide, reddish violet; 4-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, H, Ph, Cl + iodide, violet; Ph, Ph, Ph, Cl + iodide, purple. Similarly were prepd. II (same data given): H, H, Ph, Cl + iodide, violet (m. 163.degree.); Ph, H, Ph, MeSO<sub>4</sub> + ClO<sub>4</sub>, violet; N + Y = benzo, Ph, Cl + iodide, purple; H, H, H, iodide, red-violet.

IT 14969-66-5 14969-69-8 14969-82-5

15139-86-3 15139-87-4

RL: USES (Uses)  
(mixt. contg.)

IT 14969-67-6P 14969-68-7P 14969-83-6P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(prepn. of)

L4 ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1966:456766 HCAPLUS

DOCUMENT NUMBER: 65:56766

ORIGINAL REFERENCE NO.: 65:10574f-h

TITLE: 1,2-Dithiolium cation. V. Higher no-bond resonance systems

AUTHOR(S): Klingsberg, Erwin

CORPORATE SOURCE: American Cyanamid Co., Bound Brook, NJ

SOURCE: Journal of Heterocyclic Chemistry (1966), 3(2), 243

CODEN: JHTCAD; ISSN: 0022-152X

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB cf. CA 59, 12775g. Repetition of the vinylene thio group -CH:CHS would give rise to a succession of dithiole rings characterized by S no-bond resonance. The 1,2-dithiolium cation may be considered as the parent of the thiothiophene and higher systems. No-bond resonance in the 1,2-dithiolium ring would require the contributing form (I) in addn. to

the 5 ring forms already recognized. Condensation of 3-methylthio-5-phenyl-1,2-dithiolium iodide and 3-methyl-5-phenyl-1,2-dithiolium iodide in warm alc. literated MeSH and gave a good yield of a deep purple product (II III), m. 200-204.degree. (alc. contg. a trace of HI). The 4 S atoms were shown by x-ray analysis (Hordvik, CA 63, 17250g) to be nearly colinear with partial bonding of the internal pair at 3.00-3.10 A., thus suggesting contributing resonance forms and a no-bond resonance system next above thiothiophene.

IT 5676-45-9, 1,2-Dithiol-1-ium, 3-phenyl-5-[(5-phenyl-3H-1,2-dithiol-3-ylidene)methyl]-, iodide  
(prepn. of)

L4 ANSWER 16 OF 16 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1966:8031 HCAPLUS

DOCUMENT NUMBER: 64:8031

ORIGINAL REFERENCE NO.: 64:1442a-c

TITLE: Structure of 5-phenyl-3-(5-phenyl-1,2-dithiol-3-ylidenemethyl)-1,2-ditholium iodide

AUTHOR(S): Hordvik, Asbjoern

CORPORATE SOURCE: Univ. Bergen, Norway

SOURCE: Acta Chemica Scandinavica (1965), 19(5), 1253-4

CODEN: ACHSE7; ISSN: 0904-213X

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB Title compd. I, crystd. from MeOH in irregular growth, showed monoclinic crystals, space group P21/c, with a 5.25 (parallel to the needle axis), b 17.43, and c 23.26 A.; mol. wt. is 527 and d<sub>4</sub> 1.645 (indicating 1 mole MeOH of solvation). The Fourier map of the a projection gave well resolved S peaks, the electron d. map shows coplanar disulfide rings, 4 S atoms nearly colinear. Projected S-1-S-2 is 1.38, S-2-S-3 2.03 and S-3-S-4 1.35, with S-S bond in rings 2.05, and central S-2-S-3 distance 3.00-3.10 A. (van der Waals S radius is 3.70 A.).

IT 5676-45-9, 1,2-Dithiol-1-ium, 3-phenyl-5-[(5-phenyl-3H-1,2-dithiol-3-ylidene)methyl]-, iodide  
(crystal structure of)

=>

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=> fil caold

FILE 'CAOLD' ENTERED AT 16:21:56 ON 05 JUN 2003

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FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

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L5 4 L3

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=&gt; d all 15 1-4

L5 ANSWER 1 OF 4 CAOLD COPYRIGHT 2003 ACS

AN CA65:10574g CAOLD

TI 1,2-dithiolium cation - (V) higher no-bond resonance systems

AU Klingsberg, Erwin

IT 5676-45-9

L5 ANSWER 2 OF 4 CAOLD COPYRIGHT 2003 ACS

AN CA65:10574c CAOLD

TI three-membered ring system with two hetero atoms - (I) synthesis of 1.alpha.H-oxazirino-[2,3-.alpha.]quinoline derivs.

AU Kaneko, Chikara; Yamada, S.

IT 83-34-1 10590-66-6 10590-67-7 10590-68-8 10590-69-9 10590-71-3  
10590-72-4 10590-73-5 13006-59-2 13402-74-9 95842-97-0

L5 ANSWER 3 OF 4 CAOLD COPYRIGHT 2003 ACS

AN CA64:1442a CAOLD

TI structure of 5-phenyl-3-(5-phenyl-1,2-dithiol-3-ylidenemethyl)-1,2-dithiolium iodide

AU Hordvik, Asbjorn

IT 5676-45-9

L5 ANSWER 4 OF 4 CAOLD COPYRIGHT 2003 ACS

AN CA55:514b CAOLD

TI synthesis of thiazole derivs. - (XIV) alcs. of the benzothiazole series and their transformations

AU Zubarovskii, V. M.; Khodot, G. P.

IT 100-11-8 1515-83-9 32770-97-1 80936-82-9 99075-14-6 99846-82-9  
99849-18-0 101273-96-5 103204-21-3 103205-18-1 103261-69-4 103264-09-1  
103440-65-9 103646-25-9 103753-86-2 103754-68-3 103986-15-8 103989-03-3  
114426-42-5 114509-78-3 120830-56-0 120830-57-1 123005-79-8

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STRUCTURE FILE UPDATES: 4 JUN 2003 HIGHEST RN 525536-93-0

DICTIONARY FILE UPDATES: 4 JUN 2003 HIGHEST RN 525536-93-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP

PROPERTIES for more information. See STNote 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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3	RN	343960-69-0	REGISTRY
4	RN	127559-92-6	REGISTRY
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34	RN	50412-89-0	REGISTRY
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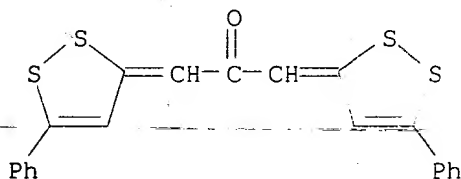
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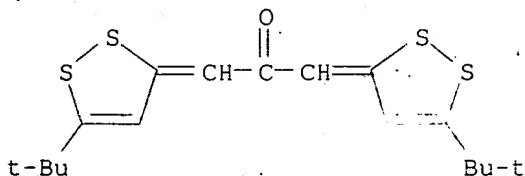
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 62

L3 ANSWER 1 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 344275-66-7 REGISTRY  
 CN 2-Propanone, 1,3-bis(5-phenyl-3H-1,2-dithiol-3-ylidene)- (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C21 H14 O S4  
 SR Reaction Database  
 LC STN Files: CASREACT



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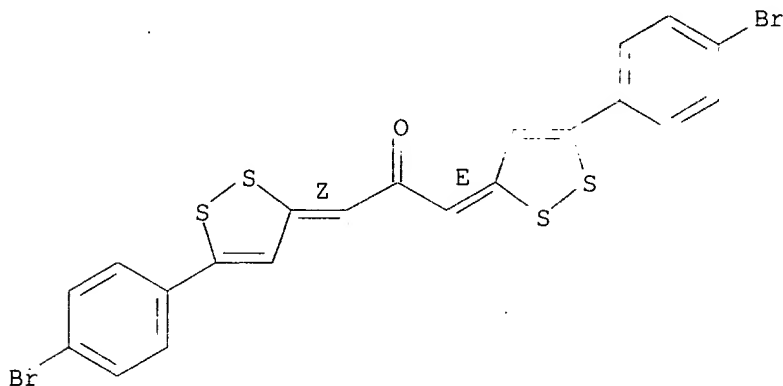
L3 ANSWER 2 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 343971-84-6 REGISTRY  
 CN 2-Propanone, 1,3-bis[5-(1,1-dimethylethyl)-3H-1,2-dithiol-3-ylidene]- (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C17 H22 O S4  
 SR Reaction Database  
 LC STN Files: CASREACT



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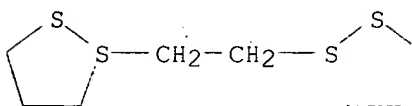
L3 ANSWER 3 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 343960-69-0 REGISTRY  
 CN 2-Propanone, 1,3-bis[5-(4-bromophenyl)-3H-1,2-dithiol-3-ylidene]-,  
 (1E,3Z)- (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C21 H12 Br2 O S4  
 SR Reaction Database  
 LC STN Files: CASREACT

Double bond geometry as shown.



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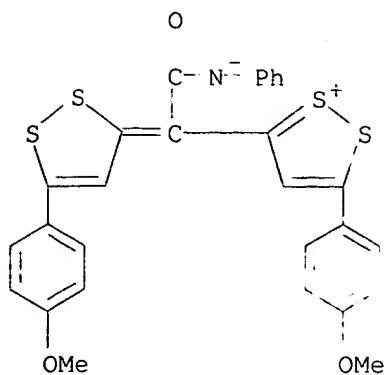
L3 ANSWER 4 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 127559-92-6 REGISTRY  
 CN 1,2-Dithiolan-1(1H)-yl, 1,1'-(1,2-ethanediyl)bis- (9CI) (CA INDEX NAME)  
 MF C8 H16 S4  
 SR CA  
 LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1957 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 113:14570

L3 ANSWER 5 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 123005-79-8 REGISTRY  
 CN 1,2-Dithiole-.DELTA.3,.alpha.-acetimidic acid, .alpha.-[5-(p-methoxyphenyl)-1,2-dithiol-3-yl]-5-(p-methoxyphenyl)-N-phenyl-, inner salt  
 (6CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C28 H21 N O3 S4  
 SR CAOLD  
 LC STN Files: CAOLD



1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 6 OF 62 REGISTRY COPYRIGHT 2003 ACS

RN 113944-86-8 REGISTRY

CN 1,2-Dithiol-1-ium, 3-[1,3-diphenyl-3-(5-phenyl-3H-1,2-dithiol-3-ylidene)-1-propenyl]-5-phenyl-, (E,E)-, (triiodide) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.

CN Iodide (I31-), (E,E)-3-[1,3-diphenyl-3-(5-phenyl-3H-1,2-dithiol-3-ylidene)-1-propenyl]-5-phenyl-1,2-dithiol-1-ium (9CI)

FS STEREOSEARCH

MF C33 H23 S4 . I3

SR CA

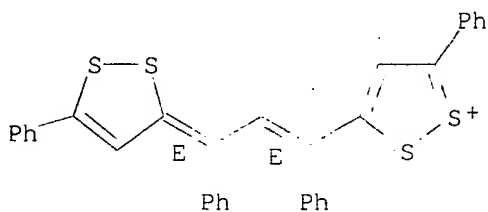
LC STN Files: CA, CAPLUS

CM 1

CRN 113944-85-7

CMF C33 H23 S4

Double bond geometry as shown.



CM 2

CRN 14900-04-0

CMF I3

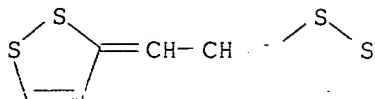
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1 REFERENCES IN FILE CA (1957 TO DATE)

1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 108:177660

L3 ANSWER 8 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 81731-56-8 REGISTRY  
 CN 3H-1,2-Dithiole, 3,3'-(1,2-ethanediylidene)bis- (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C8 H6 S4  
 LC STN Files: CA, CAPLUS



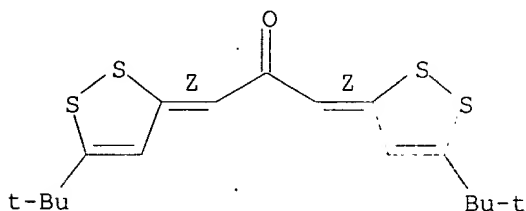
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 1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 97:71636

L3 ANSWER 9 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 69856-53-7 REGISTRY  
 CN 2-Propanone, 1,3-bis[5-(1,1-dimethylethyl)-3H-1,2-dithiol-3-ylidene]-, (Z,Z)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 3H-1,2-Dithiole, 2-propanone deriv.  
 FS STEREOSEARCH  
 MF C17 H22 O S4  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS  
 (\*File contains numerically searchable property data)

Double bond geometry as shown.



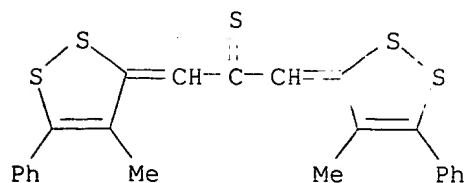
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 1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 90:152080

L3 ANSWER 13 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 66315-06-8 REGISTRY  
 CN 2-Propanethione, 1,3-bis(4-methyl-5-phenyl-3H-1,2-dithiol-3-ylidene)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 3H-1,2-Dithiole, 2-propanethione deriv.  
 FS 3D CONCORD  
 MF C23 H18 S5

LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
 (\*File contains numerically searchable property data)

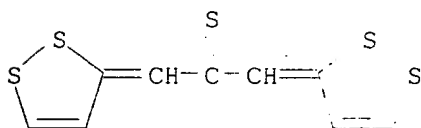


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 2 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 88:170012

L3 ANSWER 15 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 61760-16-5 REGISTRY  
 CN 2-Propanethione, 1,3-bis(3H-1,2-dithiol-3-ylidene)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 3H-1,2-Dithiole, 2-propanethione deriv.  
 FS 3D CONCORD  
 MF C9 H6 S5  
 LC STN Files: CA, CAPLUS

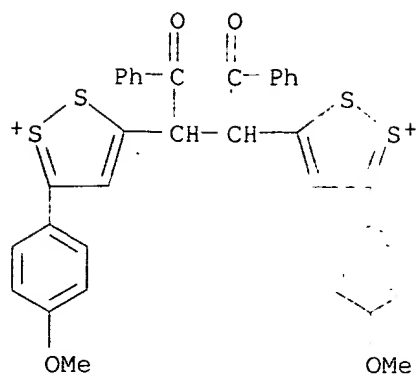


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 1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 86:71497

L3 ANSWER 18 OF 62 REGISTRY COPYRIGHT 2003 ACS  
 RN 60855-13-2 REGISTRY  
 CN 1,2-Dithiol-1-ium, 3,3'-(1,2-dibenzoyl-1,2-ethanediyl)bis[5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C36 H28 O4 S4  
 LC STN Files: CA, CAPLUS

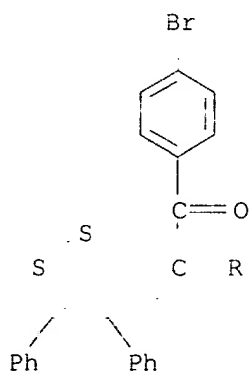


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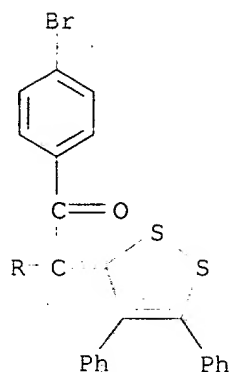
REFERENCE 1: 85:176574

L3 ANSWER 20 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 60823-00-9 REGISTRY  
CN 1,4-Butanedione, 1,4-bis(4-bromophenyl)-2,3-bis(4,5-diphenyl-3H-1,2-dithiol-3-ylidene)- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 3H-1,2-Dithirole, 1,4-butanedione deriv.  
MF C46 H28 Br2 O2 S4  
LC STN Files: BEILSTEIN\*, CA, CAPLUS  
(\*File contains numerically searchable property data)

PAGE 1-A



PAGE 2-A



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

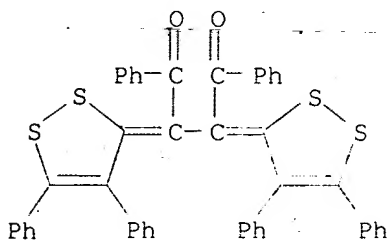
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1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 85:176574

L3 ANSWER 21 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 60822-99-3 REGISTRY  
CN 1,4-Butanedione, 2,3-bis(4,5-diphenyl-3H-1,2-dithiol-3-ylidene)-1,4-diphenyl- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 3H-1,2-Dithiole, 1,4-butanedione deriv.  
MF C46 H30 O2 S4  
LC STN Files: BEILSTEIN\*, CA, CAPLUS  
(\*File contains numerically searchable property data)



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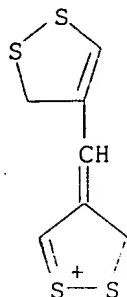
REFERENCE 1: 85:176574

L3 ANSWER 32 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 50962-67-9 REGISTRY  
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(CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.  
FS 3D CONCORD

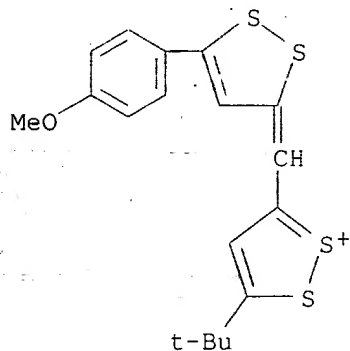
MF C7 H7 S4  
LC STN Files: CA, CAPLUS



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1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

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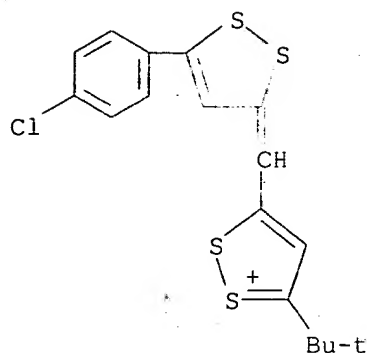
L3 ANSWER 33 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 50558-13-9 REGISTRY  
CN 1,2-Dithiol-1-ium, 3-[(1,1-dimethylethyl)-5-[[5-(4-methoxyphenyl)-3H-1,2-dithiol-3-ylidene]methyl]]- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.  
FS 3D CONCORD  
MF C18 H19 O S4  
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1957 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 79:105115

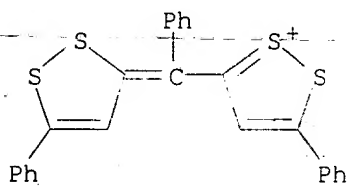
L3 ANSWER 34 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 50412-89-0 REGISTRY  
CN 1,2-Dithiol-1-ium, 3-[[5-(4-chlorophenyl)-3H-1,2-dithiol-3-ylidene]methyl]]- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.  
FS 3D CONCORD  
MF C17 H16 Cl S4  
LC STN Files: CA, CAPLUS



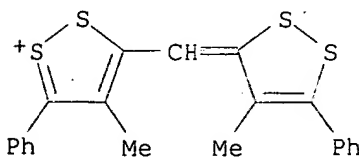
1 REFERENCES IN FILE CA (1957 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 79:105115

L3 ANSWER 37 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 47617-04-9 REGISTRY  
CN 1,2-Dithiol-1-ium, 3-phenyl-5-[phenyl(5-phenyl-3H-1,2-dithiol-3-ylidene)methyl]- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.  
FS 3D CONCORD  
MF C25 H17 S4  
CI COM



L3 ANSWER 38 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 47447-82-5 REGISTRY  
CN 1,2-Dithiol-1-ium, 4-methyl-3-[(4-methyl-5-phenyl-3H-1,2-dithiol-3-ylidene)methyl]-5-phenyl- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.  
FS 3D CONCORD  
MF C21 H17 S4  
CI COM



L3 ANSWER 40 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 47304-32-5 REGISTRY

CN 1,2-Dithiol-1-ium, 3-phenyl-5-[(5-phenyl-3H-1,2-dithiol-3-ylidene)methyl]-  
(9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.

FS 3D CONCORD

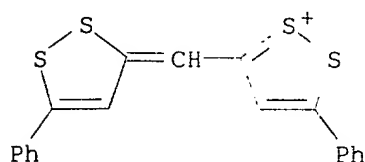
DR 47304-31-4

MF C19 H13 S4

CI COM

LC STN Files: BEILSTEIN\*, CA, CAPLUS

(\*File contains numerically searchable property data)



L3 ANSWER 42 OF 62 REGISTRY COPYRIGHT 2003 ACS

RN 46201-05-2 REGISTRY

CN 1,2-Dithiol-1-ium, 4-methyl-3-[(4-methyl-3H-1,2-dithiol-3-ylidene)methyl]-  
(9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

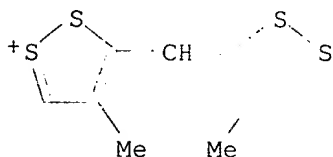
CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.

FS 3D CONCORD

MF C9 H9 S4

CI COM

LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1957 TO DATE)

1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 80:16415

L3 ANSWER 44 OF 62 REGISTRY COPYRIGHT 2003 ACS

RN 39945-12-5 REGISTRY

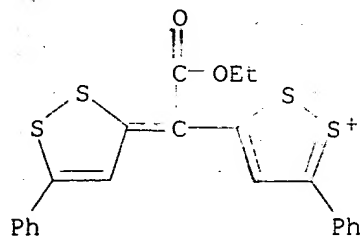
CN 1,2-Dithiol-1-ium, 3-[2-ethoxy-2-oxo-1-(5-phenyl-3H-1,2-dithiol-3-ylidene)ethyl]-5-phenyl-, chloride (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.

MF C22 H17 O2 S4 . Cl

LC STN Files: CA, CAPLUS

● Cl<sup>-</sup>

1 REFERENCES IN FILE CA (1957 TO DATE)

1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 78:57246

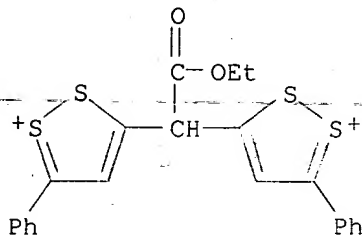
L3 ANSWER 45 OF 62 REGISTRY COPYRIGHT 2003 ACS

RN 39921-41-0 REGISTRY

CN 1,2-Dithiol-1-ium, 3,3'-(2-ethoxy-2-oxoethylidene)bis[5-phenyl-,  
dichloride (9CI) (CA INDEX NAME)

MF C22 H18 O2 S4 . 2 Cl

LC STN Files: CA, CAPLUS

● 2 Cl<sup>-</sup>

1 REFERENCES IN FILE CA (1957 TO DATE)

1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 78:57246

L3 ANSWER 46 OF 62 REGISTRY COPYRIGHT 2003 ACS

RN 39859-08-0 REGISTRY

CN 1,2-Dithiol-1-ium, 3,3'-methylenebis[5-phenyl-, diperchlorate (9CI) (CA  
INDEX NAME)

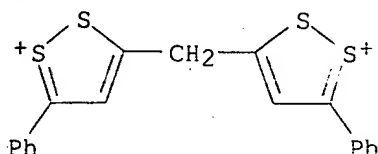
MF C19 H14 S4 . 2 Cl O4

LC STN Files: CA, CAPLUS

CM 1

CRN 47304-30-3

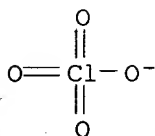
CMF C19 H14 S4



CM 2

CRN 14797-73-0

CMF Cl O4



1 REFERENCES IN FILE CA (1957 TO DATE)

1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 78:57246

L3 ANSWER 51 OF 62 REGISTRY COPYRIGHT 2003 ACS

RN 39858-93-0 REGISTRY

CN 1,2-Dithiol-1-ium, 4-methyl-3-[(4-methyl-5-phenyl-3H-1,2-dithiol-3-ylidene)methyl]-5-phenyl-, perchlorate (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.

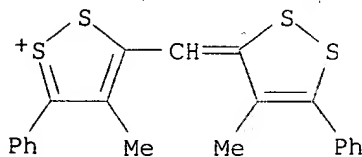
MF C21 H17 S4 . Cl O4

LC STN Files: CA, CAPLUS

CM 1

CRN 47447-82-5

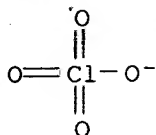
CMF C21 H17 S4



CM 2

CRN 14797-73-0

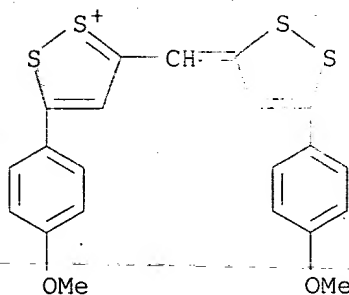
CMF Cl O4



1 REFERENCES IN FILE CA (1957 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 78:57246

L3 ANSWER 53 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 35093-36-8 REGISTRY  
CN 1,2-Dithiol-1-ium, 3-(4-methoxyphenyl)-5-[[5-(4-methoxyphenyl)-3H-1,2-dithiol-3-ylidene]methyl]-, iodide (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.  
MF C21 H17 O2 S4 . I  
LC STN Files: CA, CAPLUS



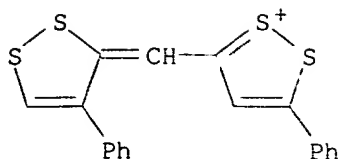
● I<sup>-</sup>

2 REFERENCES IN FILE CA (1957 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 79:105115

REFERENCE 2: 76:72440

L3 ANSWER 54 OF 62 REGISTRY COPYRIGHT 2003 ACS  
RN 15139-87-4 REGISTRY  
CN 1,2-Dithiol-1-ium, 3-phenyl-5-[(4-phenyl-3H-1,2-dithiol-3-ylidene)methyl]-, iodide (8CI) (CA INDEX NAME)  
MF C19 H13 S4 . I  
LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB

● I<sup>-</sup>

1 REFERENCES IN FILE CA (1957 TO DATE)

1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 66:105899

L3 ANSWER 56 OF 62 REGISTRY COPYRIGHT 2003 ACS

RN 14969-83-6 REGISTRY

CN 1,2-Dithiol-1-ium, 3-phenyl-5-[(5-phenyl-3H-1,2-dithiol-3-ylidene)methyl]-, methyl sulfate (8CI) (CA INDEX NAME)

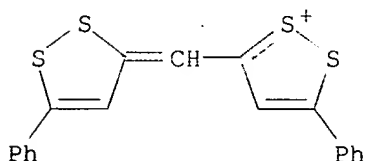
MF C19 H13 S4 . C H3 O4 S

LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB

CM 1

CRN 47304-32-5

CMF C19 H13 S4



CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO<sub>3</sub><sup>-</sup>

1 REFERENCES IN FILE CA (1957 TO DATE)

1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 66:105899

L3 ANSWER 62 OF 62 REGISTRY COPYRIGHT 2003 ACS

RN 5676-45-9 REGISTRY

CN 1,2-Dithiol-1-ium, 3-phenyl-5-[(5-phenyl-3H-1,2-dithiol-3-ylidene)methyl]-, iodide (8CI, 9CI) (CA INDEX NAME)

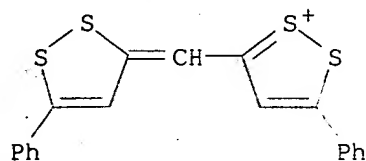
OTHER CA INDEX NAMES:

CN 3-Phenyl-5-[(5-phenyl-3H-1,2-dithiol-3-ylidene)methyl]-1,2-dithiol-1-ium iodide (7CI)

CN 3H-1,2-Dithiole, 1,2-dithiol-1-ium deriv.

DR 13402-74-9

MF C19 H13 S4 . I  
 LC STN Files: CA, CAOLD, CAPLUS  
 GRN (47304-32-5)



● I<sup>-</sup>

3 REFERENCES IN FILE CA (1957 TO DATE)  
 3 REFERENCES IN FILE CAPLUS (1957 TO DATE)  
 2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 79:105115

REFERENCE 2: 65:56766

REFERENCE 3: 64:8031